

3.1 Intro to Exponents

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* Explore pg 92

1.	Pieces of cake	Alice's height
	0	1m
	1	3m
	2	9m
	3	27m
	4	81m
	5	243m
	6	729m

$$3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 = 3^8$$

$$3^8$$

$$3^{8 \times}$$

4a) $3^2 = 3 \cdot 3 = 3 \times 3 = (3)(3)$

b) $3 \times 3 \times 3 \times 3 \times 3 = 3^5$

Vocabulary: 2^5 \swarrow exponent
 \nwarrow power

Vocabulary: 3^5 \leftarrow power
base \nearrow

★ Notes

Write $5 \times 5 \times 5 \times 5$ as a power: 5^4

Evaluate: $5^4 = 625$

Tell me base: 5
exponent: 4

Powers can have positive or negative bases

$$2^5 = (2)^5$$

$$(-3)^4 \neq -3^4$$

\uparrow
not equal

$$x^2 \quad (-y)^2$$

- exponents only affect the #/variable immediately in front of it, unless there are brackets
- exponents affect everything inside brackets

Fx

$$\frac{+}{a) \quad 6^2 = 6 \cdot 6 = 36}$$

$$b) \quad (6)^2 = (6)(6) = 36$$

$$c) \quad -6^2 = -6 \cdot 6 = -36$$

$$d) \quad (-6)^2 = (-6)(-6) = 36$$

you try:

$$a) \quad (-2)^3 = (-2)(-2)(-2) = -8$$

$$b) \quad -5^2 = -5 \cdot 5 = -25$$

$$c) \quad 4^3 = 64$$

$$d) \quad (-3)^4 = (-3)(-3)(-3)(-3) = 81$$

$$e) \quad (-1)^{108} = 1 = (-1)(-1)(-1) \dots (-1)$$

f) Label the power, base + exponent of -7^5

\uparrow \uparrow \uparrow
 7^5 7 5

\uparrow
 coefficient

Practice pg 96 #1-13, 16-22